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ABSTRACT

In an effort to assess the effectiveness of its developmental studies program, Sinclair Community College in Dayton, Ohio undertook a study of first-time college students who began their studies at the college in Fall 1991. The study sought to determine the relationship between level of remediation and retention, college-level English or math course completion, and degree completion. All 2,817 students in the Fall 1991 cohort were assigned to high, medium, low, and no risk remediation groups. Results indicate that after three terms only 44% of the no risk students remained enrolled in comparison to 58% to 69% of the students in high, medium, and low remediation groups. Also, a larger percentage of students who enrolled in remedial courses successfully completed initial college-level courses in English and math within three years than students in the no risk group. The one area in which no risk students achieved greater success than at-risk students was degree completion rates. The study concludes that the additional support at-risk students receive to overcome academic deficiencies helps them achieve a greater degree of academic integration than is achieved by no risk students. An appendix includes data tables representing results from student cohorts between Fall 1989 and Fall 1996. (AS)

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PATTERNS OF PROGRESS:
Student Persistence Isn't Always Where You Expect It

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Background

Tinto's (1993) model of student persistence asserts that academic and social integration of the individual into the culture of the higher education institution drives continued enrollment and program completion. Maintaining that the extent of this integration may vary considerably and that one form of integration may predominate, Tinto points out that it can be a challenge for community colleges to achieve a significant degree of either form of integration. Bean and Metzner (1985) cited the importance of academic integration to promote persistence among adult, non-traditional students at an urban commuter university by providing those students with evidence that they can indeed succeed in an academic environment.

Faced often with the need to serve large populations of non-traditional, underprepared students, community colleges have turned to developmental (a.k.a. remedial or compensatory) education as a principle vehicle for fostering academic integration. Developmental education has seldom been investigated – within the student persistence literature – as a factor that influences persistence. Notable exceptions include Clagett (1996), Grosset (1991), Johnson (1996), Roueche (1973, 1977) and Windham (1995). These researchers demonstrated that developmental education does influence students' educational progress in community colleges. Given the considerable extent of research on student persistence, developmental education is a largely unexplored indicator.

Data from the National Center for Education Statistics (1996) indicate that nearly all the nation's community colleges, as well as a majority of other higher education institutions, offer developmental education. A major purpose of such programs is to help underprepared students persist in higher education and achieve their respective educational goals.

Purpose

Many institutions and states dedicate copious, annual investments of human, fiscal and capital resources to remedial education programs. Like many community colleges, Sinclair Community College (an urban institution of over 19,000 students located in Dayton, Ohio), has invested substantial dollars ($2.2 million annually for operating and personnel costs) to provide a comprehensive developmental studies department that serves underprepared students. To ensure accountability, much research has been done within this institution to document the effectiveness of this investment as it relates to student learning outcomes.

Previous tracking studies conducted by this institution confirmed that the developmental student who completed all required remediation was more likely to achieve a grade of 'C' or higher in college-level coursework than the student who did not take required remediation. Though we could document success in remedial populations when measured by GPA, the institution was interested in finding a means to test commonly

held perceptions about the behaviors of underprepared students. These common perceptions (held by critics and some supporters of remedial education alike) suggest that: 1) student progress is inversely related to the need for remediation; 2) the remedial student gets mired in remediation and rarely progresses beyond that level of instruction; and 3) it is the developmental student who is most likely to leave the institution before degree completion. It was the intent of this study to test these perceptions against actual student behavior; to determine which are valid concerns; and to use the results to evaluate what the institution might do to improve the likelihood of success for its students.

To answer these questions better, we developed a procedure for assigning students to risk groups based upon the amount of remediation taken. These risk groups were then tracked to determine their progress. Such a focus permitted the institution to assess the efficacy of developmental instruction on longitudinal persistence and on students' performance in initial college-level courses. Thus, the research supports the College's overall continuous quality improvement initiative, as well as the plan for assessing student outcomes required by Sinclair's regional accrediting body.

Methodology

Sinclair requires all new, degree-seeking students to take a computer-adapted test (ACT's COMPASS) to assess their reading, writing, and mathematics abilities. Students scoring within the developmental range on this test must complete a prescribed series of developmental courses and demonstrate post-secondary proficiency in reading, writing, and mathematics before being permitted to enroll in college-level courses.

To test the theory that student progress is inversely related to the need for remediation, this project assigned new students from fall cohorts to one of four "risk groups". These risk groups were based on the lowest level of remedial coursework in which the student enrolled during their first three quarters at the institution. Based on the hypothesis, the levels were labeled as follows: (1) High Risk (requires extensive remediation – students who are unable to read at the ninth grade level and who lack basic grammar skills); (2) Medium Risk (requires a moderate level of remediation – students who are unable to read at twelfth grade level and who lack adequate skills in grammar, arithmetic, or science); (3) Low Risk (requires minimal remediation – students who lack adequate writing, basic algebra or geometry skills); and (4) No Risk (requires no remediation – students considered prepared for college-level instruction). In the Appendix, Table A presents the course goals for each remedial level. Table B shows the distribution of students in each risk level for multiple fall cohorts.

The time needed for successful course completion by each cohort and risk group was measured on two levels: the number of terms required to successfully complete the remedial sequence (if enrolled); and the time required to successful complete initial college-level English or math coursework.

Lastly, we tracked each cohort and risk group to *determine if remedial students were more likely than non-remedial students to leave the institution before degree completion.*

The following data were gathered on each student to create an even more finite set of cohorts. Degree-seeking status was collected so we could examine differences within and between risk groups on this variable. Average credit hour load (defined as the average credit hours taken over the first three quarters) allowed us to determine if these variables positively or negatively impacted retention or successful completion of developmental English and math coursework. Enrollment patterns, course completions, and graduation statistics were also compiled.

The initial tracking project reported in this paper was undertaken in 1995 and all the data available at that time for the Fall cohorts 1989 to 1993 were collected. In early 1998, the tracking program was run again to provide additional statistics, through Spring 1997, for the original five cohorts and three new cohorts – 1994, 1995, and 1996.

Complete data – for at least three years after the initial start term – are now available for six cohorts that entered the College beginning in Fall 1989. The actual retention and completion percentages vary somewhat from one cohort to another, but the enrollment and performance patterns are nearly identical for each cohort. For ease of interpretation, findings from the 1991 Cohort are presented here. Full data for all cohorts can be found in the Appendix. A second look at the conclusions, using data from the 1994 Cohort, follows the discussion of the 1991 Cohort findings.

The 1991 Cohort Characteristics

The 1991 Cohort consisted of all first-time-in-college students who began at Sinclair in Fall 1991. Overall, there were 2,817 students in this cohort. The first risk level (high remediation) consisted of 137 students (4.9%); there were 976 (34.6%) in the second level (medium amount of remediation); and 402 (14.3%) were assigned to the third risk category (low remediation). The remaining students (1,302 or 46.2%) were placed into Risk Level 4, indicating that developmental courses were not taken. Overall, approximately 54% of this cohort enrolled in developmental education courses.

Average credit hour load was recorded for each student, based on the average number of credit hours taken per term during the first three quarters. *In general, average credit hour load was lower for students who took more remedial preparation.* Over 88% of Risk Level 1 (high remediation) averaged less than 6 credit hours per term that first year (see Table C in the Appendix). Degree-seeking status was determined from an "intent" question on the admissions application. Approximately 84% of the 1991 Cohort declared themselves to be degree-seeking.

Findings: Attrition

Retention rates for each Risk Level were represented by the percentage of students who were no longer enrolled after one quarter, three quarters, and three years. Table 1 demonstrates the enrollment patterns for the 1991 Cohort. Tables D, E, and F in the Appendix contain enrollment statistics for all cohorts. *Contrary to expectations, the No Risk students (Risk Level 4) emerged as the group least likely to persist from quarter-to-quarter.* After three terms, about 44% of this group were still enrolled, and the remedial students had retention rates of 58% to 69%. Low Risk students (Risk Level 3) were the students most likely to be enrolled after three years (26% remained). Additionally, loss of enrollment during this period was not offset by graduations – only 4.1% of all students (and 4.9% of the degree-seekers) had graduated after three years.

TABLE 1

Risk Level	**Percent Not Enrolled**		
	After 1 quarter	*After 3 quarters*	*After 3 years*
1 (High remediation)	29.9	41.6	76.6
2 (Medium remediation)	23.7	30.8	73.4
3 (Low remediation)	24.1	32.6	69.9
4 (No remediation)	44.9	55.5	78.3

This same data was collected on the degree-seekers within the cohorts to determine if degree-seeking status had an impact on the findings. Although the percentage of students who attrited was somewhat less among the degree-seekers within the risk groups, the relationship continued to hold true: students who enrolled in remedial courses were more likely to persist than those who did not enroll in such courses.

Findings: Developmental Course Sequence Completions

In order to enroll in initial college-level courses, students requiring remediation must first complete the recommended sequence of developmental courses. In the 1991 Cohort, only about 44% of those who enrolled in remediation completed the developmental sequence within three years. *However, in reviewing the difference between the risk groups, the Medium Risk group had the best completion rate (52%) and High-Risk students were least likely to complete remedial requirements.* Table 2 illustrates developmental sequence completion for each of the remedial risk groups.

TABLE 2

	Percent Completing Developmental Sequence	
Risk Level	*After 3 Quarters*	*After 3 Years*
1 (High remediation)	16.1	22.6
2 (Medium remediation)	49.8	52.0
3 (Low remediation)	31.8	32.8
Risk Levels 1 - 3	**42.0**	**44.3**

It appears that the concern that students can become mired in remediation for an extensive period may be justified (especially for those in the High Risk group); yet it is valuable to note that, for those retained students who do complete the developmental sequence, most do so within three quarters.

Findings: Entry-Level Course Success

Course completion was also documented for remedial and non-remedial students as they moved into initial college-level English and math classes. The percentage of students in each Risk Level who took an initial college-level English or math course and passed it with a "C" or better within three years after starting at Sinclair (Spring 1994 for the 1991 Cohort) is presented in Table 3.

TABLE 3

	Percent Completing Initial College-Level Courses After Three Years	
Risk Level	*English*	*Math*
1 (High remediation)	21.2	15.3
2 (Medium remediation)	50.2	24.1
3 (Low remediation)	55.2	33.6
Levels 1 - 3	**48.9**	**25.8**
4 (No remediation)	**38.9**	**19.0**

In general, a larger percentage of students who enrolled in remedial courses successfully completed initial college-level courses in English and math within three years than students who did not take remedial courses.

Completion of initial college-level math for *degree-seekers* was similar, except that the magnitude of difference was notably less, with only a 1% differential (26% of remedial students and 25% of the Risk 4 group successfully completed initial college-level math). 50% of both remedial and non-remedial degree-seekers successfully completed initial college-level English courses by the end of three years.

Findings: Graduation

The one area in which Risk Level 4 students (no remediation taken) had greater success than those who did take remediation was graduation rate. The overall graduation rate for degree-seekers in the 1991 Cohort by Spring 1994 (three years later) was 4.9%; the rate for Risk Level 4 was 8.0%. Table 4 presents graduation rate by Risk Level for degree-seekers from the 1991 Cohort. (Graduation rates for all cohorts are found in Table G of the Appendix).

TABLE 4

Degree-Seekers	
Risk Level	*Percent Graduated After 3 Years*
1 (High remediation)	0.8
2 (Medium remediation)	2.6
3 (Low remediation)	4.3
4 (No remediation)	8.0

Among those who enrolled in remedial courses, students from the group that enrolled in the highest level of developmental courses (Risk Level 3) were the most likely to graduate after three years.

Looking at retention and performance data for degree-seekers of the 1991 Cohort **six years** (Spring 1997) after they entered Sinclair, the following points should be noted:

- 13% of *degree-seekers* who took developmental courses (Risk Levels 1 - 3) and 16% of the non-remedial *degree-seeking* students graduated.
- Students in Risk Level 3 (low risk) had the highest graduation rate of all degree-seeking students after 6 years (18.4%).

TABLE 5

Degree-Seekers	
Risk Level	*Percent Graduated After 6 Years*
1 (High remediation)	9.6
2 (Medium remediation)	11.4
3 (Low remediation)	18.4
Levels 1 - 3	13.1
4 (No remediation)	15.6

Current Findings: 1994 Cohort

Although it is interesting to track an older cohort for an extended time, it is also valuable to see if later cohorts have similar patterns of retention and course completion. As mentioned earlier, the tracking procedure originally conducted in 1995 was repeated in 1998 and three new cohorts were added: 1994, 1995, and 1996. To date, we have three years worth of data for only one of these cohorts, 1994, and, therefore, we will compare it to the 1991 Cohort.

- After one quarter, three quarters, and three years, *students who took developmental courses were more likely to be retained than those who did not take developmental courses.* First-to-second quarter retention increased nearly 6 percentage points from the 1991 Cohort to the later 1994 Cohort.

- As was true for the 1991 Cohort (degree-seekers and overall), *students who sought moderate remediation (Risk Level 2) were most likely to complete the developmental sequence.* Improvements from 1991 to 1994 were seen in sequence completion for the highest and lowest remedial groups.

- *Those who sought no remediation (Risk Level 4) had the best graduation rate. However, the rate of graduation for the 1994 Cohort* (10.2% for degree-seekers) improved over the rate of degree-seekers from the 1991 Cohort (8.0%).

- There were *no real differences in initial college-level English and math completion rates for remedial or non-remedial students in either cohort*, regardless of degree-seeking status.

- Within each cohort, *a larger percentage of students in the developmental risk groups successfully completed initial college-level math and English* than did those who took no remediation.

- After three years, *students in Risk Level 3 (low remediation) had the best retention rate* both overall and for degree-seekers only, regardless of the cohort year.

Tables H and I in the Appendix give more detailed information on the 1991 and 1994 Cohorts.

Conclusions

This study raises several challenges to the "common perception" hypotheses the institution examined. One surprising finding was that persistence rates were lower among students who did not enroll in developmental education courses than among students who did enroll in such courses. Somers (1992) and Lavin, et al. (1997) noted in their studies of persistence at open-admission urban universities that, among

students leaving such institutions, those in good academic standing outnumbered those not in good standing. So, there is evidence that confounds the usual presumption that the highest rates of persistence are associated with the most academically prepared students. There may be a Hawthorn effect operating here regarding developmental students: the additional attention and support these students receive to overcome academic deficiencies may help them achieve a greater degree of academic integration than is achieved by students who begin at an institution ready for college-level coursework.

There does appear to be some credence to the perception that remedial students can find themselves perpetually unable to complete their remedial sequence. However, within the remedial subpopulations there were notable differences. Students in Risk Level 1, who were enrolled in high levels of remediation were much less likely to complete the remedial sequence than students of the other risk groups. Approximately 42% of all remedial students successfully completed the sequence in less than one year, yet it is noteworthy that those who took medium level remediation outpaced the group that took only minimal remediation.

Compared to the non-remedial (Risk Level 4) group, a higher percentage of the total remedial population successfully completed either an initial college-level English or math course.

Graduation rates of the non-remedial group were better than the rates of students who enrolled in developmental education courses. However, the graduation rates (after three and six years) of degree-seeking remedial students increased 10 percentage points, from 2.9% (after three years) to 13% (after six years). The graduation rate of non-remedial degree-seeking students went up just 8 percentage points during the same period (8% to 16%).

So, who is at risk? If we define "at-risk" as more likely to leave the institution or less likely to complete initial college-level English or math classes, it is the non-remedial student who is more at-risk. Perhaps it is now an obligation of community colleges to rethink their strategies and promote student persistence in terms of both at-risk and not-at-risk students.

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Appendix

TABLE A

Developmental Course Objectives
by Risk Level

	Goals of Developmental Courses
Risk Level 1 (High remediation)	• Bring students up to 9th grade reading level • Basic grammar and sentence structure
Risk Level 2 (Medium remediation)	• Bring students up to 12th grade reading level • Grammar and paragraph formation • Basic arithmetic • Overview of science; how to study Science
Risk Level 3 (Low remediation)	• Pre-Algebra and basic geometry • Essay writing

TABLE B

Cohort Distributions by Risk Level

	COHORT							
	Fall 1989	***Fall 1990***	***Fall 1991***	***Fall 1992***	***Fall 1993***	***Fall 1994***	***Fall 1995***	***Fall 1996***
OVERALL	2396	2638	2817	2535	2456	2207	2004	2391
Risk Level 1								
Number	86	115	137	138	122	115	95	86
Percent	3.6	4.4	4.9	5.4	5.0	5.2	4.7	3.6
Risk Level 2								
Number	604	801	976	942	890	852	756	819
Percent	25.2	30.4	34.6	37.2	36.2	38.6	37.7	34.3
Risk Level 3								
Number	264	378	402	404	424	353	309	391
Percent	11.0	14.3	14.3	15.9	17.3	16.0	15.4	16.4
Risk Level 4								
Number	1442	1344	1302	1051	1020	887	844	1095
Percent	60.2	50.9	46.2	41.5	41.5	40.2	42.1	45.8
% Requiring Remediation	39.8	49.1	53.8	58.5	58.5	59.8	57.9	54.2

TABLE C

Average Credit Hour Load by Risk Level

	COHORT															
	Fall 1989		Fall 1990		Fall 1991		Fall 1992		Fall 1993		Fall 1994		Fall 1995		Fall 1996	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Risk Level 1	86	100.0	115	100.0	137	100.0	138	100.0	122	100.0	115	100.0	95	100.0	86	100.0
LT 6	76	88.4	101	87.8	121	88.3	119	86.2	108	88.5	101	87.8	82	86.3	79	91.9
6 - 11.9	9	10.5	14	12.2	16	11.7	19	13.8	14	11.5	14	12.2	13	13.7	7	8.1
12 +	1	1.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Risk Level 2	604	100.0	801	100.0	976	100.0	942	100.0	890	100.0	852	100.0	756	100.0	819	100.0
LT 6	350	57.9	495	61.8	605	62.0	593	63.0	635	60.1	546	64.1	491	64.9	511	62.4
6 - 11.9	234	38.7	295	36.8	360	36.9	339	36.0	342	38.4	295	34.6	250	33.1	293	35.8
12 +	20	3.3	11	1.4	11	1.1	10	1.1	13	1.5	11	1.3	15	2.0	15	1.8
Risk Level 3	264	100.0	378	100.0	402	100.0	404	100.0	424	100.0	353	100.0	309	100.0	391	100.0
LT 6	122	46.2	187	49.5	182	45.3	191	47.3	211	49.8	165	46.7	147	47.6	180	46.0
6 - 11.9	122	46.2	166	43.9	194	48.3	182	45.0	188	44.3	159	45.0	145	46.9	178	45.5
12 +	20	7.6	25	6.6	26	6.5	31	7.7	25	5.9	29	8.2	17	5.5	33	8.4
Risk Level 4	1442	100.0	1344	100.0	1302	100.0	1051	100.0	1020	100.0	887	100.0	844	100.0	1095	100.0
LT 6	1008	69.9	941	70.0	829	63.7	644	61.3	581	57.0	484	54.6	423	50.1	638	58.3
6 - 11.9	266	18.4	239	17.8	277	21.3	239	22.7	248	24.3	231	26.0	227	26.9	220	20.1
12 +	168	11.7	164	12.2	196	15.1	168	16.0	191	18.7	172	19.4	194	23.0	237	21.6

TABLE 3

Percent Not Enrolled After One Quarter
by Risk Level

	COHORT							
	Fall 1989	*Fall 1990*	*Fall 1991*	*Fall 1992*	*Fall 1993*	*Fall 1994*	*Fall 1995*	*Fall 1996*
OVERALL	38.8	36.7	33.8	30.9	29.0	28.0	27.0	32.2
Risk Level 1	22.1	20.9	29.9	23.2	25.4	16.5	22.1	32.6
Risk Level 2	23.2	21.8	23.7	23.7	19.4	23.8	22.6	24.7
Risk Level 3	22.7	22.2	24.1	23.0	26.7	20.7	25.6	24.6
Risk Level 4	49.3	50.9	44.9	41.5	38.8	36.3	32.0	40.6
DEGREE-SEEKERS	34.9	29.4	28.1	28.8	26.0	24.8	25.2	29.4
Risk Level 1	21.4	20.9	27.2	23.0	23.7	15.9	22.3	33.3
Risk Level 2	22.4	21.1	22.6	23.0	19.1	24.0	22.5	24.4
Risk Level 3	22.5	21.7	23.4	22.9	25.5	20.7	25.5	22.9
Risk Level 4	44.7	40.2	35.7	38.7	34.0	29.4	28.6	36.8

TABLE E

Percent Not Enrolled After Three Quarters
by Risk Level

	COHORT							
	Fall 1989	***Fall 1990***	***Fall 1991***	***Fall 1992***	***Fall 1993***	***Fall 1994***	***Fall 1995***	***Fall 1996***
OVERALL	49.7	47.0	43.0	43.7	41.1	40.8	40.4	40.3
Risk Level 1	33.7	33.0	41.6	38.4	41.0	33.9	33.7	34.9
Risk Level 2	33.9	35.2	30.8	38.9	32.6	37.2	36.8	33.9
Risk Level 3	37.5	32.8	32.6	33.9	38.2	36.0	37.2	34.5
Risk Level 4	59.5	59.2	55.5	52.6	49.7	47.1	45.5	47.6
DEGREE-SEEKERS	46.1	40.1	37.4	41.4	37.9	37.5	38.1	37.8
Risk Level 1	33.3	34.5	38.4	38.5	39.0	33.6	34.0	34.6
Risk Level 2	33.5	34.3	30.2	38.2	32.2	37.4	36.6	33.7
Risk Level 3	37.5	32.4	31.9	33.3	37.2	35.3	37.9	33.4
Risk Level 4	55.1	48.5	46.7	49.1	44.3	39.4	40.7	44.0

TABLE F

Percent Not Enrolled After Three Years
by Risk Level

	COHORT							
	Fall 1989	*Fall 1990*	*Fall 1991*	*Fall 1992*	*Fall 1993*	*Fall 1994*	*Fall 1995**	*Fall 1996**
OVERALL	75.2	74.0	75.3	74.0	76.3	74.2	66.4	51.5
Risk Level 1	74.4	73.9	76.6	78.3	78.7	77.4	72.6	47.7
Risk Level 2	69.4	69.8	73.4	72.8	74.4	75.9	67.1	48.0
Risk Level 3	65.9	66.9	69.9	69.1	74.3	69.1	66.7	45.8
Risk Level 4	79.3	78.6	78.3	76.5	78.6	74.2	65.0	56.5
DEGREE-SEEKERS	72.6	69.1	71.8	72.1	74.3	71.7	64.0	47.7
Risk Level 1	73.8	72.7	75.2	77.8	78.0	77.9	72.3	48.1
Risk Level 2	68.8	68.7	72.5	72.4	74.1	75.7	66.9	47.4
Risk Level 3	64.4	66.2	69.9	69.0	73.7	68.2	66.1	44.5
Risk Level 4	76.1	70.2	71.4	72.3	74.4	67.4	58.7	49.5

** Through Fall, 1997*

TABLE G

Percent Graduated After Three Years
by Risk Level

	COHORT							
	Fall 1989	*Fall 1990*	*Fall 1991*	*Fall 1992*	*Fall 1993*	*Fall 1994*	*Fall 1995**	*Fall 1996**
OVERALL	4.8	5.1	4.1	4.7	4.6	4.8	2.9	1.3
Risk Level 1	3.5	0.9	0.7	0.7	0.0	0.9	0.0	0.0
Risk Level 2	5.1	3.9	2.5	3.3	3.8	2.2	0.5	0.1
Risk Level 3	6.8	5.6	4.0	5.7	5.2	5.4	1.0	0.3
Risk Level 4	4.3	6.1	5.8	6.2	5.7	7.6	6.2	2.6
DEGREE-SEEKERS	5.5	6.3	4.9	5.2	5.1	5.4	3.3	1.5
Risk Level 1	3.6	0.9	0.8	0.7	0.0	0.0	0.0	0.0
Risk Level 2	5.5	4.1	2.6	3.4	3.9	2.3	0.5	0.1
Risk Level 3	7.1	5.9	4.3	5.9	5.4	5.5	1.0	0.3
Risk Level 4	5.3	9.0	8.0	7.5	7.0	10.2	7.8	3.5

** Through Fall, 1997*

TABLE H

Percent Completing (Courses and Degree)
After 3 Years
1991 Cohort

OVERALL COHORT
(N = 2,817)

Developmental Sequence	
Risk Level 1	22.6
Risk Level 2	52.0
Risk Level 3	32.8
Risk Levels 1 - 3	44.3

Initial College-Level English	
Risk Level 1	21.2
Risk Level 2	50.2
Risk Level 3	55.2
Risk Levels 1 - 3	48.9
Risk Level 4	38.9

Initial College-Level Math	
Risk Level 1	15.3
Risk Level 2	24.1
Risk Level 3	33.6
Risk Levels 1 - 3	25.8
Risk Level 4	19.0

Graduated	
Risk Level 1	0.7
Risk Level 2	2.5
Risk Level 3	4.0
Risk Levels 1 - 3	2.7
Risk Level 4	5.8
Overall	*4.1*

DEGREE-SEEKERS
(N = 2,358)

Developmental Sequence	
Risk Level 1	24.8
Risk Level 2	52.5
Risk Level 3	31.9
Risk Levels 1 - 3	44.7

Initial College-Level English	
Risk Level 1	22.4
Risk Level 2	51.2
Risk Level 3	56.1
Risk Levels 1 - 3	50.0
Risk Level 4	49.6

Initial College-Level Math	
Risk Level 1	16.0
Risk Level 2	24.4
Risk Level 3	33.2
Risk Levels 1 - 3	26.0
Risk Level 4	24.8

Graduated	
Risk Level 1	0.8
Risk Level 2	2.6
Risk Level 3	4.3
Risk Levels 1 - 3	2.9
Risk Level 4	8.0
Overall	*4.9*

TABLE I

Percent Completing (Courses and Degree)
After 3 Years
1994 Cohort

OVERALL COHORT
(N = 2,207)

Developmental Sequence	
Risk Level 1	32.2
Risk Level 2	47.2
Risk Level 3	44.2
Risk Levels 1 - 3	45.1

Initial College-Level English	
Risk Level 1	21.7
Risk Level 2	43.0
Risk Level 3	62.0
Risk Levels 1 - 3	46.2
Risk Level 4	43.3

Initial College-Level Math	
Risk Level 1	18.3
Risk Level 2	22.5
Risk Level 3	35.1
Risk Levels 1 - 3	25.5
Risk Level 4	18.3

Graduates	
Risk Level 1	0.9
Risk Level 2	2.2
Risk Level 3	5.4
Risk Levels 1 - 3	3.0
Risk Level 4	7.6
Overall	*4.8*

DEGREE-SEEKERS
(N = 1,951)

Developmental Sequence	
Risk Level 1	31.9
Risk Level 2	47.5
Risk Level 3	43.7
Risk Levels 1 - 3	45.1

Initial College-Level English	
Risk Level 1	21.2
Risk Level 2	43.4
Risk Level 3	62.1
Risk Levels 1 - 3	46.4
Risk Level 4	52.5

Initial College-Level Math	
Risk Level 1	17.7
Risk Level 2	22.7
Risk Level 3	35.9
Risk Levels 1 - 3	25.7
Risk Level 4	23.0

Graduates	
Risk Level 1	0.0
Risk Level 2	2.3
Risk Level 3	5.5
Risk Levels 1 - 3	2.9
Risk Level 4	10.2
Overall	*5.4*